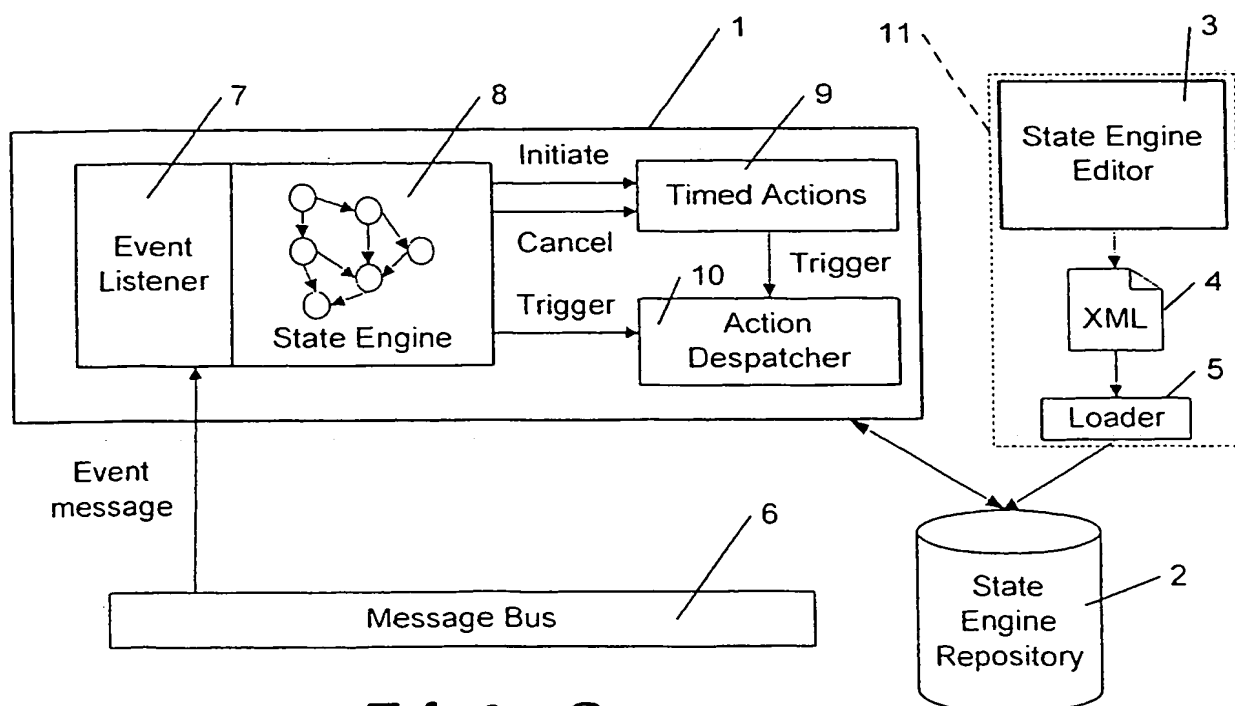
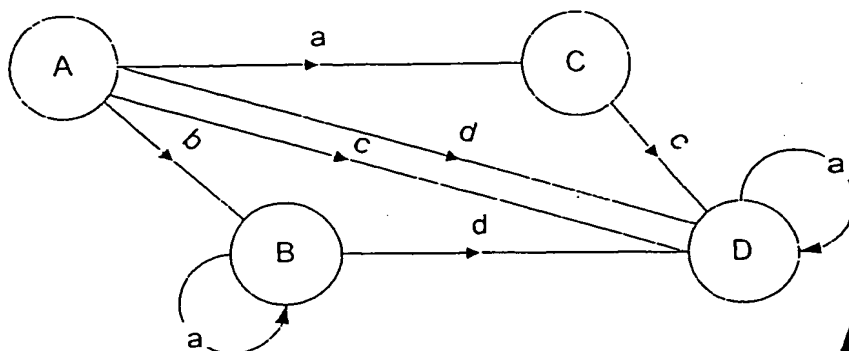
**Fig. 1****Fig. 2**

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**Fig. 3**

Current State / Incoming Event	State A	State B	State C	State D
Event a	New State: State C Action 1 Action 2 Timed Action 1	Action 7 Timed Action 2		Action 1
Event b	New State: State B Action 3 Timed Action 2 Timed Action 3			
Event c	New State: State D Action 4 Action 5 Action 6		New State: State D Action 4 Action 5	
Event d	New State: State D Action 5	New State: State D Action 3 Action 5		

**Fig. 4**

Element	Description
<BPSE>	Global element for the business process state engine repository
<ObjectTypes>	Definition of object types
<ObjectType xid=string>	Unique Ref ID of the object type (system generated)
<Name>string</Name>	Name of the object type
<Description>string</Description>	Description of the object type
</ObjectType>	
<ObjectType xid=string>	
...	
</ObjectTypes>	
<Diagrams>	Definition of state diagrams
<Diagram xid=string>	Unique Ref ID of the diagram (system generated)
<Name>string</Name>	Name of the diagram
<Description>string</Description>	Description of the diagram
<ObjectTypeRef xid=string>	Ref of the object type on which the diagram applies
</Diagram>	
<Diagram xid=string>	
...	
</Diagrams>	
<States>	
<State xid=string>	Unique Ref ID of the state (system generated)
<Name>string</Name>	Name of the state
<Description>string</Description>	Description of the state
<DiagramRef xid=string>	Ref to the diagram to which the state belongs
</State>	
<State xid=string>	
...	
</States>	
<Events>	
<Event xid=string>	Unique Ref ID of the event (system generated)
<Name>string</Name>	Name of the event
<Description>string</Description>	Description of the event
<ObjectTypeRef xid=string>	Object type on which event is applicable
</Event>	
<Event xid=string>	
...	
</Events>	

**Fig. 5a**

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<Actions>	
<Action xid=string>	Unique Ref ID of the action (system generated)
<Name>string</Name>	Name of the action
<Description>string</Description>	Description of the action
<ObjectTypeRef xid=string>	Object types on which action is applicable (optional)
</Action>	
<Action xid=string>	
...	
</Actions>	
<TimedActions>	
<TimedAction xid=string>	Unique Ref ID of the timed action (system generated)
<Name>string</Name>	Name of the timedaction
<Description>string</Description>	Description of the timed action
<ObjectTypeRef xid=string>	Object types on which timed action is applicable (optional)
<TimeOut>string</TimeOut>	Time when action(s) will fire (dd hh:mm)
<Actions>	Action(s) that will fire when timeout expires
<Action xid=string />	Ref to the action to be fired
...	
</Actions>	
</TimedAction>	
<TimedAction xid=string>	
...	
</TimedActions>	
<Transitions>	
<Transition xid=string>	
<TriggeringEvent xid=string />	Ref to the event that triggers the transition
<Diagram xid=string />	Ref to the state digram to which the transition belongs
<Source xid=string />	Ref to the source state of the transition
<Target xid=string />	Ref to the target state of the transition
<Actions>	Ref to the actions to be taken when transition occurs
<Action xid=string />	
...	
</Actions>	
<TimedActions>	Ref to timed actions to be scheduled
<TimedAction xid=string>	
...	
</TimedActions>	
</Transitions>	
</BPSE>	

**Fig. 5 b**

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Element	Description
<EventMessage>	Global element for the event message
<Header>	Event header information
<Origin>string</Origin>	Origin (system that generated the message on the bus)
<MessageDateTime>string</MessageDateTime>	When the message was sent (DD-MM-YYY HH:MM:SS)
<EventType>string</EventType>	What type of event
<EventDateTime>string</SendDateTime>	When the original event was created (DD-MM-YYY HH:MM:SS)
<Location>string</Location>	Where the event was created
<User>string</User>	Who created the event
<Reason>string</Reason>	Why the event was created
<Method>string</Method>	How the event was created
<ObjectType>string</ObjectType>	Object type on which the event applies
<ObjectID>string</ObjectID>	Object ID on which the event applied
</Header>	
<Object>	Specific Object data associated with the event - format specific to the object type
<ObjectData1>...<ObjectData1>	Object specific data
...	
<ObjectDataN>...<ObjectDataN>	Object specific data
</Object>	
</EventMessage>	

**Fig. 5c**

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Element	Description
<ActionMessage>	Global element for the action message
<Header>	Action header information
<Origin>string</Origin>	Origin (system that generated the message on the bus)
<MessageDateTime>string</MessageDateTime>	When the message was sent (DD-MM-YYY HH:MM:SS)
<ActionType>string</ActionType>	What type of action
<Reason>string</Reason>	Why the action was triggered
<ObjectType>string</ObjectType>	Object type on which the action applies
<ObjectID>string</ObjectID>	Object ID on which the action applies
</Header>	
<Object>	Specific Object data associated with the event - format specific to the object type
<ObjectData1>...<ObjectData1>	Object specific data
...	
<ObjectDataN>...<ObjectDataN>	Object specific data
</Object>	
</ActionMessage>	

**Fig. 5d**

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**State Engine Editor**

**Entities** | **Diagrams** | **Repository**

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>Object types

Object Type Editor

Name:   
Description:

New Update Delete

Name	Description
<u>Package</u>	Package
<u>Order</u>	Shipping Order
<u>CSTask</u>	Customer Service Task

**Fig. 6**

**State Engine Editor**

**Entities** | **Diagrams** | **Repository**

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>Events

Event Editor

Name:   
Description:   
Object type:

New Update Delete

Name	Description	Object type
<u>Created</u>	Package created	Package
<u>CarrierIntransit</u>	Carrier in transit	Package
<u>CarrierPOD</u>	Carrier proof of delivery	Package
<u>CPScanIn</u>	Scan in by CP	Package
<u>DeliveredUser</u>	Delivered to User	Package

**Fig. 7**

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**State Engine Editor**

Entities | Diagrams | Repository

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>Actions

Action Editor

Name  
Description  
Object type

New Update Delete

Name	Description	Object type
<u>LogEvent</u>	Log event	
<u>CarrierCollect</u>	Notify Carrier to collect	Package
<u>NotifyUser</u>	Send message to recipient	Package

**Fig. 8**

**State Engine Editor**

Entities | Diagrams | Repository

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>TimedActions

Timed Action Editor

Name  
Description  
Object type  
Timer (dd hh:mm)  
Generic Actions  
Object Specific Actions

New Update Delete

Name	Description	Object type
<u>DelUncollected</u>	Delivery package uncollected	Package
<u>DeliveryLate</u>	Delivery delayed	Package
<u>RetUncollected</u>	Return not collected by carrier	Package

**Fig. 9**



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**State Engine Editor**

**Entities** **Diagrams** **Repository**

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>StateDiagrams

State Diagram Editor

Name  
Description  
Object type

New Update Delete

Name	Description	Object type
<u>PkgDelivery</u>	Package Delivery flow	Package
<u>PkgReturn</u>	Package return flow	Package
<u>PickProcess</u>	Package picking flow	Order

**Fig. 10**

**State Engine Editor**

**Entities** **Diagrams** **Repository**

Object types  
Events  
Actions  
Times Actions  
State Diagrams  
States

Entities>States

State Editor

Name  
Description  
State Diagram

New Update Delete

Name	Description	State Diagram
<u>Created</u>	Package created	PkgDelivery
<u>InTransit</u>	Package in transit	PkgDelivery
<u>DeliveredCP</u>	Package delivered in CP	PkgDelivery
<u>DeliveredUser</u>	Package delivered to user	PkgDelivery

**Fig. 11**

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**State Engine Editor**

**Entities** **Diagrams** **Repository**

PkgDelivery  
PkgReturn  
PickProcess

Source State

None  
Created  
InTransit  
DeliveredCP  
DeliveredUser

Diagrams>PkgDelivery>Created

**Transition Editor**

Triggering Event

Target State

Generic Actions

Object Specific Actions

Generic Timed Actions

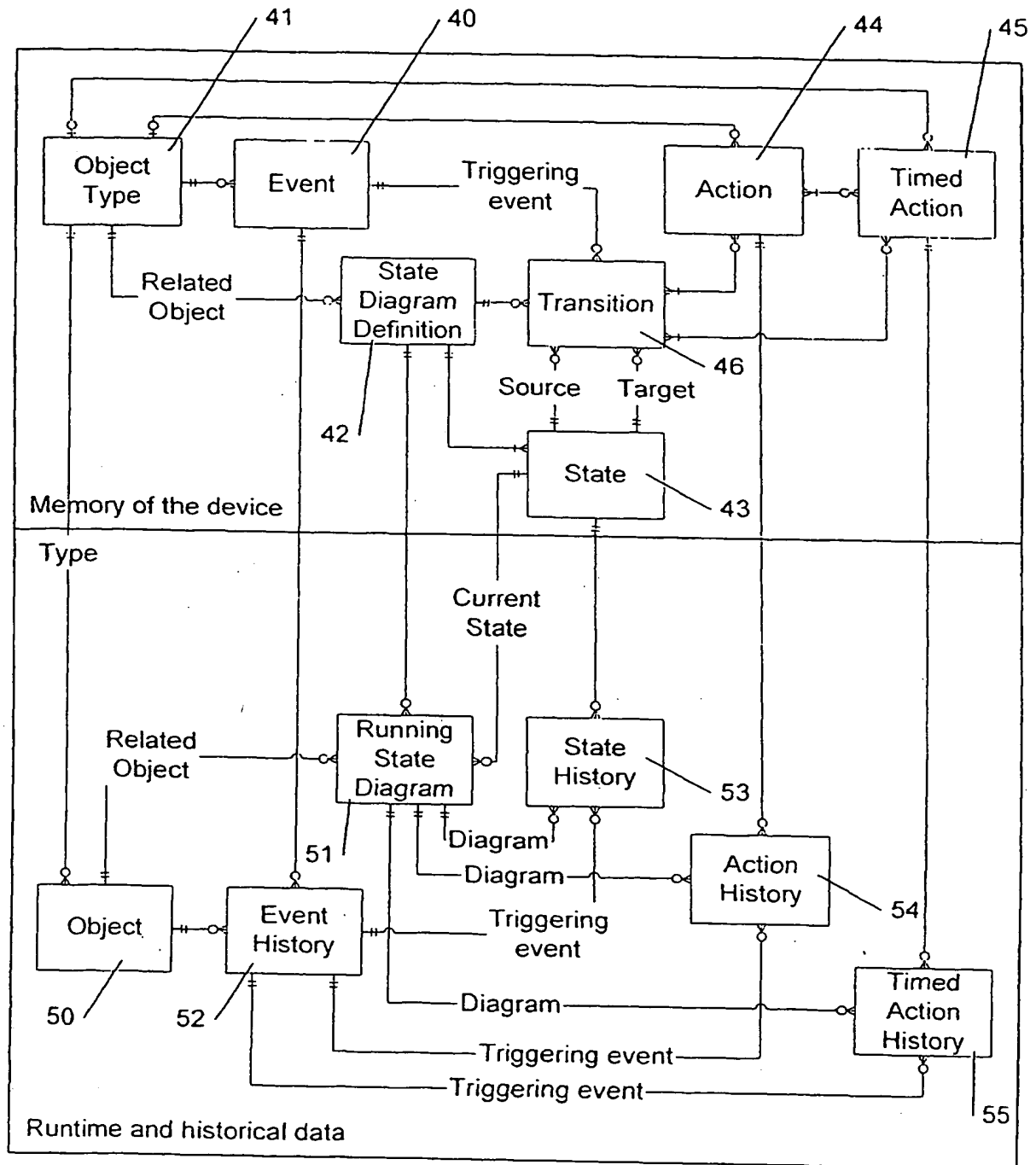
Object Specific Timed Actions

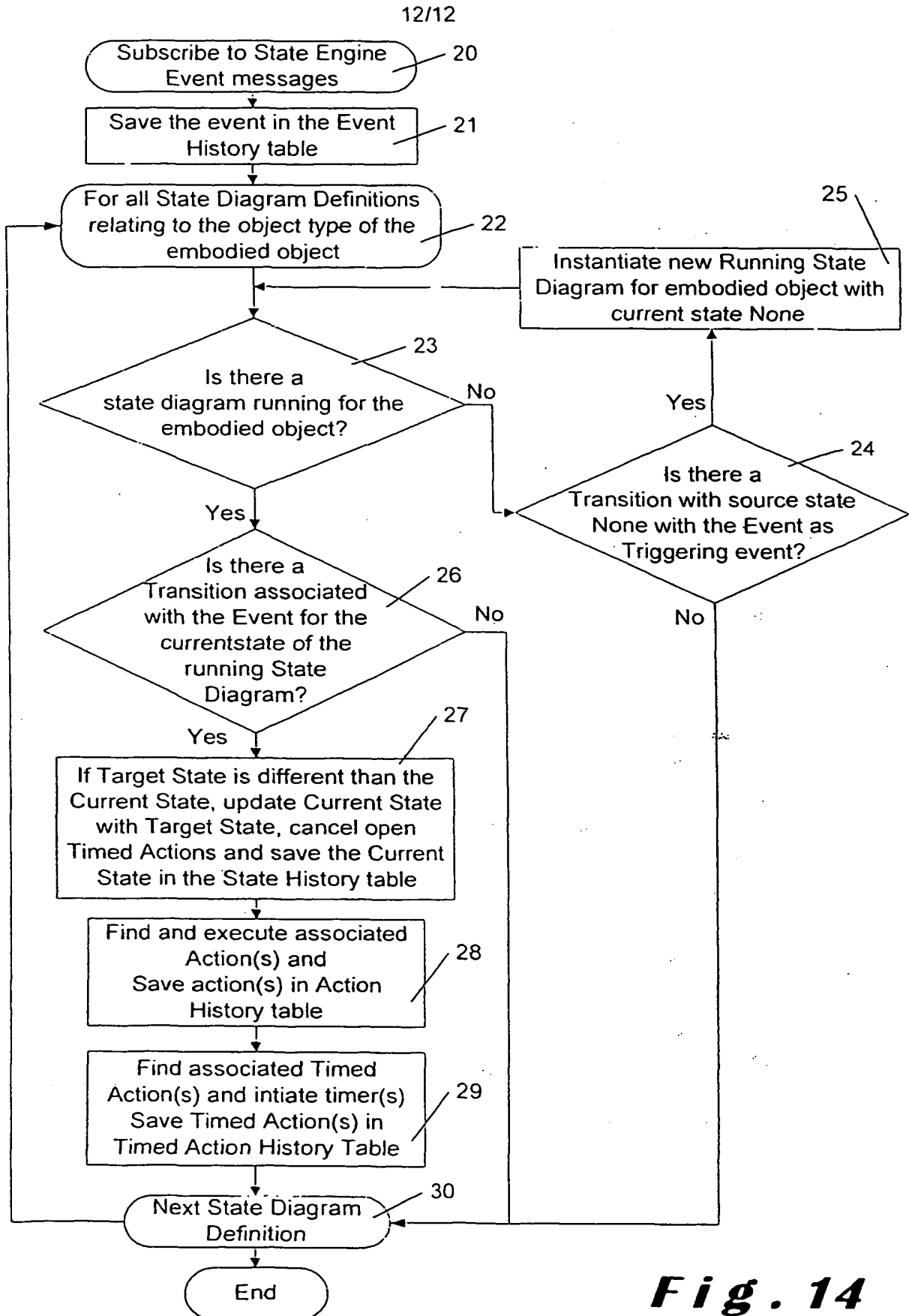
New Update Delete

Triggering Event	Target State
Created	Created
CarrierIntransit	InTransit
CarrierPOD	DeliveredCP
CPScanIn	DeliveredCP
DeliveredUser	DeliveredUser

**Fig. 12**

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**Fig. 13**

**Fig. 14**